

WE CLAIM AS OUR INVENTION  
Patent Claims

1. Method for removal of ATM cells from an ATM communications device, having
- 5 a plurality of ATM cells, a plurality of which are in each case assigned to a common frame and which are stored in connection-specific queues, and having a first algorithm (PPD) by means of which, with the exception of the first and last ATM cell in a frame,
- 10 all the newly arriving cells in the frame are removed, a second algorithm (EPD) by means of which all the ATM cells in a frame, from the first to the last cell, are removed on arrival in a queue from the ATM communications device,
- 15 characterized
- in that, at the start of the transmission process, a user indicates the maximum number of ATM cells per frame (MFS), using which number the ATM cells are transmitted,
- 20 in that in the situation where this number is exceeded, the associated frame is discarded or the first algorithm (PPD) is used.
2. Method according to Claim 1, characterized
- 25 in that the length of the queue is controlled on a connection-specific basis.
3. Method according to Claim 1 or 2, characterized
- in that a constant value (MFS) is used per connection,
- 30 which is a measure of the maximum frame size of the connection.
4. Method according to Claims 1 to 3, characterized
- in that, per connection, the number of the cells which
- 35 have arrived for this connection since the end of the last frame for this connection is stored.

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5. Method according to one of the preceding claims,  
characterized  
in that no high-priority cells are stored for a  
5 connection if the length of the queue for this  
connection is equal to a value (S\_PPD\_0) which is  
independent of this connection and which represents a  
measure for a fixed upper limit for the queue.
6. Method according to one of the preceding  
10 claims,  
characterized  
in that, if high-priority frames do not exceed the  
maximum frame size (MFS), the first algorithm (PPD) is  
not used for this frame.
- 15 7. Method according to one of the preceding  
claims,  
characterized  
in that a specific amount of the buffer store is  
reserved for high-priority cells per connection, and  
20 low-priority cells are not given any access to this  
storage area.
8. Method according to one of the preceding  
claims,  
characterized  
25 in that no low-priority cells are stored for a  
connection if the length of the queue for this  
connection is of at least one size  $S\_PPD\_1 = S\_EPD\_1 +$   
MFS, where S\_EP D\_1 is independent of this connection  
and maximum frame size (MFS) depends on the connection.
- 30 9. Method according to one of the preceding  
claims,  
characterized  
in that high-priority frames are completely discarded  
if, on arrival of the first cell of a connection, less  
35 than the maximum frame size (MFS) remains in the logic  
queue for this connection or the logic queue exceeds  
the S\_EP D\_0 threshold and the status of the buffer  
store indicates that high-priority frames should be  
discarded.

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10. Method according to one of the preceding claims,  
characterized

5 in that high-priority frames are discarded if, on arrival of a cell which is neither the first nor the last cell in a frame, the logic valve queue has at most one free memory location, or if the logic queue length exceeds a connection-specific threshold value S\_PPD\_0, or if the filling level of the buffer store indicates  
10 that high-priority frames should be rejected, or if the length of the frame is greater than the maximum frame size (MFS) cells.

11. Method according to one of the preceding claims,

15 characterized

in that low-priority frames are completely discarded if, on arrival of the first cell of this connection, the length of the queue for this connection is greater than a variable S\_PPD\_1 or if the length of the queue  
20 is longer than a value S\_EPD\_1 and the status of the buffer store indicates that low-priority frames should be discarded.

12. Method according to one of the preceding claims,

25 characterized

in that some low-priority frames for a connection are discarded if, on arrival of a cell which is neither the first nor the last cell in the frame, the length of the queue for this connection is greater than a variable  
30 S\_PPD\_1 - 1 or the length of the queue is greater than a variable S\_EPD\_1 and the status of the buffer store indicates that low-priority frames should be discarded, or if the frame is longer than the maximum frame size (MFS).

35 13. Method according to one of the preceding claims,  
characterized

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in that the queue-specific value S\_EPD\_0 is greater than the value S\_PPD\_1 and less than the value PPD\_0 - MFS,

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the value S\_PPD\_0 representing a measure for a fixed upper limit for the queue.

14. Method according to one of the preceding claims,

5 characterized

in that, if the buffer store filling level is low, high-priority frames whose first cell has been transferred and whose frame length does not exceed the maximum frame size (MFS) are not subjected to the first  
10 algorithm (PPD).

15. Method according to one of the preceding claims,

characterized

in that if the buffer store filling level is low, low-  
15 priority frames whose first cell has been transferred and whose frame length does not exceed the maximum frame size (MFS) are not subjected to the first algorithm (PPD).

16. Method according to one of the preceding  
20 claims,

characterized

in that the EPD\_flag and the FPD\_flag are not set at the same time.

17. Method according to one of the preceding  
25 claims,

characterized

in that the values MFS + S\_EPD 0 are stored and the variables EPD\_FLAG, FPD\_FLAG and current\_Frame\_length are controlled for each connection, the variable  
30 current\_Frame\_length being a measure of the length of the current frame.

*add A<sup>7</sup>*

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